MODULE 3

The evolution and structure of human societies

Introduction

This is the central and longest module of the book and it contains a comprehensive treatment of the major substantive items that constitute anthropology as it is understood today. The module is organised using an evolutionary framework which presents in a sequential order the modes of subsistence that have characterized the totality of human history. It also considers, if relevant and feasible, the mechanisms that explain the transition from one mode of subsistence to the next. Although the book deals essentially with social and cultural anthropology, it also makes use of some developments in physical anthropology and archaeology to provide the desired encompassing perspective. Hence the module begins with a brief excursion into the immediate ancestors of humanity and also explores our inheritance from a past we shared with the ancestors of the modern apes.

Since the module presents an evolutionary scheme, it is only natural that some discussion should take place on the different evolutionary models available. Anthropology, like any other discipline, cannot operate without concepts. In dealing with societies a number of concepts and typologies have been put forward over the years by the practitioners of the discipline; they constitute a more or less coherent body of ideas. At the level of theory, however, the divergences are more pronounced.

A large part of the text is dedicated to the study of the successive modes of subsistence that have marked the evolution of humankind. Specifically, we shall be looking at the following types of societies: hunter-gatherers, horticultural, pastoral, agrarian and industrial. Attention is also paid to such issues as the origins of agriculture, the origins of civilisation and the state, the origins of capitalism and industrialism, and so on. For each mode of subsistence corresponds one or more modes of socio-cultural integration.

A note about terminology. Some terms which were widely used by anthropologists in the past are often avoided today for a variety of reasons, mostly because they reflect a sense of Western superiority. However, when referring to past literature, it is not always easy to adapt the terminology to the needs of the present. I have retained some of the words but used them in a neutral sense; in particular, the word 'primitive' is not used in any derogatory sense, but simply to indicate a mode of subsistence and of socio-cultural integration that came early in the history of humankind and can be defined by a combination of characteristics.

Aims

In this module we consider the evolution and structure of human societies; the main aims are:

1. To offer an introduction to the work of Charles Darwin.
2. To give a panoramic view of human evolution.
3. To familiarise the student with the main schemes of evolution.
4. To acquire the conceptual, typological and theoretical tools required to understand the basic anthropological literature.
5. To understand the main features of the hunting-gathering band.
6. To examine the different theories that try to account for the transition from hunting-gathering to the domestication of plants and animals.
7. To see pastoralism as a specialised adaptation to certain types of environment.
8. To consider in some detail the theories that try to explain the origins of the state.
9. To compare the different types of agrarian societies on the basis of their civilisation and religion.
10. To have a good grasp of the major theories of the origins of capitalism.
11. To know what is meant by a world-system perspective.

1. Darwin's theory of evolution

1.1 Why bother with Darwin?

On 22nd September, 1994, the world press had some unusual headlines. For once, they had nothing to do with politics or economics, or even with

wars or sleazy scandals. *The Guardian* put it in the following way: 'New missing link? A four-million year-old find pushes back the frontier of history'.

What was all the fuss about? Simply that some scientists working in Ethiopia had unearthed a fossil which is the closest link so far discovered to the common ancestor of both human beings and chimpanzees. This new being, named by anthropologists *Australopithecus ramidus* (meaning root of the Southern Ape), is the latest in a long chain of evidence which confirms Darwin's theory of evolution. Darwin predicted that the most ancient signs of human evolutionary history would be found in Africa. On 11th July 2002 the world press saluted a new dramatic discovery: that of an even older hominid: in the skull of a seven-million-year-old ancestor. He was referred to as the *Sahelanthropus tchadensis* and was named Toumaï, that is, the 'hope of life'.

Darwin is a fashionable author. Many scholarly and popular books and articles are currently being published on his work. In 1992 Penguin issued a long but eminently readable biography by two historians of science: Adrian Desmond and James Moore; it was simply called: *Darwin*. In 1995, Michael White and John Gribbin have published a more scientific biography entitled *Darwin. A Life in Science*. Last, but not least, Daniel Dennet's *Darwin's Dangerous Idea. Evolution and the Meanings of Life* (1995) was being heralded in the daily and weekly press as a major contribution to the understanding of Darwin's immense scientific revolution. As to Janet Radcliffe Richards's *Human Nature After Darwin: A Philosophical Introduction* (2000), it is a vivid and clear presentation of Darwinism.

What is the interest of Darwin for us as social and cultural anthropologists? First and foremost because he is an exemplary scientist from whom we all can learn. Second, because he worked in an area (biology) which has implications for the anthropologists. Third, because social evolutionism has been an important theory, particularly but not exclusively in the nineteenth century. Fourth, because the supposed application of his theories to human affairs gave rise to pernicious social doctrines referred to under the general rubric of social Darwinism.

Darwin's scientific standing

Modern genetics (that is, the science that studies biological inheritance; that deals with DNA, genes, and so on) and palaeontology (that is, the study of the past through fossils or mineralised remains of plants and animals) have demonstrated the soundness of Darwin's ideas. They have shown that the publication of *The Origins of Species* in 1859. was a portentous revolutionary event. At the dawn of a new century many intellectual idols of the twentieth century have shown that they have feet of clay (and I am thinking particularly of Marx and Freud, whose theories have been widely criticised and demonstrated to be largely

wrong). But this is certainly not the case with Darwin who emerges as a towering figure, comparable only to Copernicus, Galileo and Newton.

Darwin as a scapegoat

So, I have come to praise Darwin, not to bury him. He was indeed a child of his time: nobody can deny that. Shakespeare warned us that 'The evil that men do lives after them; the good is often interred with their bones'. Interspersed in Darwin's writings one may find statements that reflect the prejudices of his class, race, gender and nationality. But is there anything more inane and futile that to project our own morality, which is the product of our own era and hence transitory, upon the Victorian past?

To do that may give us a sense of moral superiority, but it is unavoidably anachronistic, out of place. What is important to emphasise in the case of Darwin is that, beyond the vagaries of his own environment, his theory of evolution has not only withstood the test of time, but has come out reinforced. Darwin is a model scientist in whom theory and observation are beautifully and productively intertwined. His magnum opus, *The Origins of the Species* (1859) is a classic: a reservoir of ideas, hypotheses and intuitions.

Darwin's method: was he an inductivist or a deductivist?

When describing scientific practice, philosophers of science refer to two major methodological approaches: inductivism and deductivism. Induction is about accumulating experimental facts and drawing up a theory from them. Deductivism, or the hypothetico-deductive method as is often referred to, suggests that scientists proceed by formulating general hypotheses which are later tested empirically.

If I mention these two visions of how science proceeds is because Darwin often presents his scientific method as inductivist. We can read, for example, in *The Origin of Species* (1859) that his method consisted of 'patiently accumulating and reflecting on all sorts of facts which could possibly have any bearing on it'. In his *Autobiography* (1887: 119)) he says explicitly: 'I worked on true Baconian principles, and without any theory collected facts on a wholesale scale'.

On the other hand, if we look at Darwin's scientific notebooks and correspondence, it is obvious that he entertained the hypothesis of the evolutionary transmutation of the species shortly after returning from the voyage of the *Beagle*. Why the discrepancy? There are good reason why Darwin was cautious about being seen to use the deductive method. First, because in his time the word hypothesis was often used to refer to metaphysical speculation without any substantial basis. Darwin believed that the sociologist Herbert Spencer was guilty of this crime! Second, because he was worried of being accused of subjective bias in the evaluation of empirical evidence.

How to account for Darwin's success?

In his *Autobiography* (1887) Darwin thought about his own success as a scientist in these terms:

> 'I have steadily endeavoured to keep my mind free so as to give up any hypothesis, however much beloved (and I cannot resist forming one on every subject), as soon as facts are shown to be opposed to it' (1887: 141) 'Love of science, unbounded patience in long reflecting over any subject, industry in observing and collecting facts, and a fair share of invention {imagination?} as well as common sense.' (1887: 145)

It has often been said that Darwin appeared at a moment in time when the idea of evolution was ripe, but it is his great merit to have articulated a comprehensive solution to the puzzle of evolution. Only Alfred Russell Wallace had reached, independently of Darwin, the conclusion that the key to evolution was natural selection.

It should be remembered that the pre-Darwinian doctrines of evolution had two important weaknesses:

1. They could not provide a well-organised body of evidence to show that evolution had occurred.
2. They could not provide a verifiable explanation of how it had occurred.

1.2 The Darwinian Laboratory: The Voyage of the Beagle (1831–36)

Between 1831 and 1836 Darwin travelled in South America and the Pacific as a naturalist on the *Beagle*. His observations concerning the relations between animals in islands and those of the nearest continental areas (animals which were akin, but not the same) and between living animals and fossils found in the same areas – here again related but not the same – laid the foundations for his later work. The idea of the modification of the species stems from these observations.

De Beer (1971) has suggested that when Darwin first sailed in the Beagle he had no reason to challenge the view that the species and plants alive on earth had been there since the creation. Doubts came only step by step and arose from four different types of evidence:

1. In some areas species had become extinct. Darwin found huge fossil armadillos in South America. But armadillos of similar form still live in the same region. This meant that 'existing animals had a close relation in form with extinct species': Why?
2. In areas of close proximity in South America, Darwin found one species replaced by different but similar species. For example, in certain parts of Argentina, he found ostriches; further south, in Patagonia, he found a very similar but smaller species of ostrich. Why were there two similar species of ostrich, different from those of the African ostriches? The same could be applied to many other species.

3. Another question was posed by the observation that inhabitants of islands near the neighbouring continent resemble the species of the latter. Why?
4. Darwin noticed that the different Galapagos Islands, although identical in climate and physical features and very close to each other, had nonetheless very different species. Why?

Darwin did not find an immediate answer to these questions. But in the years after his return to England, and very slowly and gradually, the answer came. All these questions and many other could only be answered if species did not remain immutable but changed into other species and diverged, so that one species could give rise to two or more species. For example, it is because they have a common ancestor that South American armadillos resemble each other. The differences between birds in the Galapago Islands were the result of adaptations to suit different ends: they were the result of isolation. The idea then came to Darwin that animals and humans alike have a common ancestor.

1.3 Darwin's Notebooks

These *Notebooks* (1856) served as a preparation for *The Origins of Species*. Early on, by 1837, Darwin saw that selection was the keystone to man's success in the domestication of plants and animals. This idea only came to him after he collected data on the formation of the breeds of plants and animals. The problem was how to apply selection to organisms living in a state of nature. This was a mystery.

For a while, Darwin followed two false paths:

> Laws of change which affect species and finally lead to their extinction (analogy with the causes that bring about development, maturing and death to an individual.
>
> Species must give rise to other species or else die out, just as an individual dies completely if it bears no offspring.

The Impact of Malthus

In October 1838 Darwin read Malthus's *An Essay on the Origins of Population* (1798). This mathematician and cleric had pointed out at the end of the eighteenth century that the human population of the world would increase in a geometrical progression were it not that a large fraction of the progeny in each generation failed to survive and to reproduce, whereas food production would only increase arithmetically unless technology improved.

By 1838, Malthus's ideas and his observations convinced Darwin of the struggle for existence and led him to write:

> 'Under these circumstances, favourable variations would tend to be preserved and unfavourable ones to be destroyed. The result of this would be the formation of a new species. Here, then, I had a theory by which to work.' (1887: 120)

The Long March Towards a Theory of Evolution.
In 1842 Darwin wrote a sketch of his theory and by 1844 he had written an essay 230 pages long. Illness, however, stopped progress. Darwin took a long time, however, to realise that progressive divergence was an advantage in itself, because competition is most severe between closely related organisms (since members of the same species go for the same food).

In 1844 Darwin wrote a letter to Sir Joseph Hooker with the following passage:

> 'At last gleams of light have come and I am almost convinced (quite contrary to the opinion I started with) that species are not (it is like confessing a murder) immutable.' (1995: 173–4)

Darwin continued the preparation of a treatise on evolution, but ill-health and the sheer magnitude of the endeavour delayed its completion In 1856, his friend, the great geologist Sir Charles Lyell, urged him to finish the work, but by 1858 he was only halfway through it. Then, in that year, Darwin received a letter from Alfred Russell Wallace, at that time ill somewhere in the Moluccas; enclosed was an essay which presented in a summarised way his theory of evolution by natural selection. Darwin had been forestalled!

To be fair to both Darwin and Wallace, Hooker and Lyell decided to send Wallace's essay, as well as an abstract of Darwin's work, to the Linnean Society, the scientific society for biologists in Piccadilly. The title of the joint scientific communication was *On the Tendency of Species to Form Varieties and of the Perpetuation of Varieties and Species by Means of Natural Selection*. This paper was read on July 1st, 1858, and published the same year (Darwin 1993).

As part of Darwin's submission was a letter he had sent to the American botanist Asa Gray. This was Darwin's first attempt to present his theory of natural selection. Because of its concision and clarity it is an excellent means by which to consider Darwin's theory. There are three points in this letter that are worth highlighting:

1. Man has domesticated breeds of animals and plants by selection, conscious or unconscious, of very slight or greater variations. Human beings had been practising human selection for several thousand of years, deliberately choosing the parent of the plants and animals to perpetuate and improve the desired qualities.

2. How could selection operate in nature? Darwin had observed that the material for selection exists in nature, namely slight variations of all parts of the organism. He had also observed that some species are better adapted than others to life in particular environments (that is, they leave more descendants), while the less adapted may diminish and disappear.

3. The 'unerring' power that sift these variations is natural selection which selects exclusively for the good of each organic being. The rate

of increase is such that only a few in each generation can live. Hence the continuing, insufficiently appreciated, struggle for life.

1.4 The Origin of Species

The Origins of the Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life was published in November 1859. The first edition (1,250 copies) was exhausted on the day of publication; six more editions followed during Darwin's lifetime.

Darwin saw evolution as the change that species undergo in relation to their adaptation to the environment. According to Goudge (1973) Darwin's theory was aimed at proving the following propositions:

1. All species of organisms now on earth have descended by a long, gradual process of modification from a small number of very different species in the remote past.
2. The chief cause of the transmutation of species is natural selection, which acts on populations of organisms having varying and inheritable characteristics. As a result there is differential survival and reproduction in the population, depending on the extent to which the characteristics favour or handicap the organisms in the struggle for existence.
3. Natural selection accounts for the adaptations of viable organisms to widely different conditions of life. It also tends to improve those adaptations, and conversely, it leads to the extinction of poorly adapted species.

A brief summary of Darwin's theory of evolution by natural selection can be found in De Beer (1971):

1. The number of individuals in species in nature remains more or less constant.
2. There is an enormous overproduction of pollen, seeds, larvas, eggs, and so on.
3. Therefore there must be high mortality.
4. All individuals in a species are not identical, but show variation and differ from one another in innumerable anatomical, physiological and behavioural aspects.
5. Therefore some will be better adapted than others to their conditions of life and to the ecological niches which they could occupy, will survive more frequently in the competition for existence, will leave more offspring, and will contribute most of the parents who will produce the next generation.
6. Hereditary resemblance between parents and offspring is undeniable.

7. Therefore, successive generations will not only maintain but improve their degree of adaptation to their modes of life, that is to say, to the conditions of their environments. As these conditions vary in different places, successive generations will not only differ from their parents, but also from each other and give rise to divergent stocks issuing from common ancestors.

1.5 The impact of Darwin's work

The impact of *The Origins of Species* on Western culture was tremendous. Perhaps the single most important effect was to destroy the quasi-theological frame of mind in the sciences, so that biologists no longer concerned themselves with Genesis, the Biblical story of the creation of the species, or geologists with the story of the Flood. Darwin's proof that species change in a gradual orderly way under the influence of natural causes used the same uniformitarian principle (that is, that ancient changes in the earth's surface are caused by the same physical principles that act today) that made Lyell the founder of scientific geology. The adaptations of plants and animals to their environment, were accounted for by Darwin without any reference to divine purposes. The living world was explained by Darwin in naturalistic terms.

The importance of Darwinism to the conception of man was central; many of the social and human disciplines were radically affected by Darwin's revolutionary work. From *The Origins of Species* (1859), it was clear that human beings were not the descendants of a historical Adam created by God in 4004 BC, but from remote pre-human ancestors. Some of the implications of Darwin's work in the area of bodily traits were presented by Thomas H. Huxley in his *Man's Place in Nature* (1863).

In a later work, *The Descent of Man* (1871), Darwin tried to show the evolution of mental, moral and social traits. There is no doubt that for Darwin things like conscience, religion, and powers of reasoning had evolved in man, and were not immutable. In other words, these psychological features were affected by natural selection. However, he was also aware that natural laws could be affected by education and imitation. Because there had been an unequal progress of the races, Darwin was convinced that Western civilisation was intellectually superior to other ones, although as he put it at the end of the book:

> 'The main conclusion arrived at in this work, namely that man is descended from some lowly organised form will, I regret to think, be highly distasteful to many persons ... But there can hardly be a doubt that we are descended from barbarians.' (1871: 404)

Darwin's ideas found a lot of resistance even among scientists like Lyell, Wallace, Gray and others. However, in the great dividing line between the racialism and pro-slavery of the Anthropological Society of London and the abolitionism of the Ethnological Society of London, Darwin was

definitely with the latter. By the end of the century, and particularly after the discovery of various proto-hominid fossil remains, the 'death of Adam', as John Greene has suggested, was widely accepted.

The Darwinian theory found stiff opposition among theologians, but there also was a popular reaction against it. On the other hand, the upper classes felt that it threatened their privileges. They associated the doctrine of evolution with the atheistic material that had been part of the French Revolution. The ancient regime was overthrown by those who believed that human beings could improve their lot by their own efforts; many believed Darwinism to belong to this family of radical ideas. Many Victorian conservatives felt the doctrine of evolution by natural selection was a threat to Church and State, though Darwin had declined Karl Marx's offer to dedicate the first volume of *Capital* to him.

The success of the Darwinian scheme of explanation was felt in a number of methodological points which influenced subsequent science (Goudge 1973):

1. Darwin showed that explanation can be historical without losing its scientific character. In biology one often has to explain phenomena by showing how they originated and developed. To understand the tree of life ones has to understand how it grew.

2. By retaining idealist elements in his treatment of natural selection, Darwin established evolutionary science on a scientific basis. He then introduced 'statistical' or population data to permit generalisations to be made about the changes which selection produces in individuals.

3. *The Origins of the Species* explained what happened in evolution as an outcome of both orderly and accidental events. Natural selection is an order-generating process. The occurrence of variations, the survival and reproductive success of organisms, and so forth, are matters of accident or chance. It thus became clear that a discipline does not need to establish what must necessarily happen according to universal laws in order to be a science.

4. The Darwinian explanation showed that although adaptations are not the result of design, they are nevertheless purposive. They serve certain ends and must be so studied. Thus a scientific concept of teleology can be admitted, but at the same time theological and metaphysical teleology are rejected.

1.6 Darwin: important dates

1809. Birth of Charles Darwin.
1825. Darwin entered the University of Edinburgh.
1831. Darwin embarked on the 'Beagle' as a naturalist.
1833. Darwin found in South America the remains of large, extinct mammals, associated with marine forms similar to modern ones.

1835. Darwin landed in the Galapagos Islands.
1836. His arrival in Australia and return to England.
1837. He began the first notebook on the transmutation of species.
1838. Darwin began to read Malthus's *Essay on Population*.
1839. He published a book on coral reefs. First draft of work on the evolution of species.
1844. Second draft of book on species.
1846. He began to study barnacles.
1854. Darwin finished his monograph on barnacles and started full-time research on the species.
1858. He received Wallace's manuscript on the evolution of species. Joint paper by Darwin and Wallace read before the Linnean Society ('Evolution by Natural Selection').
1859. Publication of *The Origin of Species by Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life.*
1871. *The Descent of Man, and Selection in Relation to Sex* published.
1872. Publication of *The Expression of the Emotions in Man and Animals*.
1882. Death of Darwin.

2. The human legacy: adapted mind or adaptable mind?

2.1. Hominid evolution

When Darwin suggested in *The Origin of Species* (1859) that humans were descended from apes the statement created a tremendous uproar. To many, both on the left and on the right, religious and non-religious, the claim that humans had originated from the apes was extremely demeaning for the human condition. The Darwinian revolution, however, has had durable effects, although Darwin's theory of evolution is still poorly understood by many. Most social scientists believe that evolutionary biology is irrelevant to the study of human societies because humans have culture, rather than being genetically programmed. In the past few years there has been rapid development of the different disciplines that deal, in an evolutionary framework, with the origins of mankind. Evolutionary theory allows us, by studying the fossil past, to unravel how modern humans came to be what they are.

In tracing back human evolution one can consider a very distant past or a relatively more recent one: this, of course, depends on the purpose of the study. Modern humans have inherited an accumulation of different traits. For example, the earliest anthropoids (the common ancestors of humans, apes and monkeys) lived approximately 40 million years ago, and it is at this point that slow reproductive rates, a strong mother-child bond, sociality, a rudimentary system of communication and food malleability were introduced. Or we could fix our attention on the African apes who